Charts VIII to XI cover the period from the 1st to 4th, inclusive, when heavy weather prevailed over the middle and western sections of the ocean.

On the 5th a severe disturbance was central about 400 miles south of the Azores, with a secondary LOW about the same distance south of St. Johns, Newfoundland, while anticyclonic conditions prevailed over the British Isles.

On the 6th and 7th a depression, that on the latter date was central in western Kentucky, extended as far south as the Gulf of Mexico, with barometric readings on the 7th of 29.52 inches at both New Orleans and Pensacola. On the 8th New York, with a reading of 29.08 inches, was near the center of this LOW, and on that day as well as the 9th westerly gales prevailed along the American coast, between the twenty-fifth and fortieth parallels.

From the 10th to 12th the Azores HIGH and Icelandic LOW were both well developed, and during that period northerly to westerly gales occurred between the twenty-fifth meridian and European coast.

From the 13th to 15th a LOW was over the western section of the ocean that reached its greatest intensity on the 14th, with westerly winds of force 7 to 9 between the thirty-fifth and fortieth parallels and fiftieth to sixtieth meridians; on the 15th northerly gales also occurred over the steamer lanes between the twentieth and thirtieth meridians.

On the 18th and 19th, the central section of the ocean was covered by a disturbance that on the former date extended from the thirtieth to forty-fifth parallels. On the 20th the center of this LOW was about 300 miles north of the Azores, where strong westerly gales prevailed.

On the 22d Belle Isle, Newfoundland, was near the center of a deep LOW, with westerly winds of force 7 to 9 between the fortieth and forty-fifth parallels. From the 23d to 25th moderate weather was the rule over the ocean as a whole, although a few vessels reported winds of force 7 and 8 during this period.

On the 26th and 27th a depression was over Maine and the Province of Quebec, with resultant westerly gales along the coast from Hatteras to Nantucket. On the 26th there was also a LOW central near 50° N., 35° W. that moved slowly eastward, and on the 28th was off the coast of Ireland, the storm area then extending from the forth-fifth to fifty-fifth parallels, and tenth to twenty-fifth meridians.

A depression that on the 29th was central near 50° N., 40° W., developed later into the most severe disturbance of the month, and on the 30th the steamer lanes east of the fifty-fifth meridian were swept by moderate to strong westerly gales. By the 31st the disturbance had contracted somewhat in extent but increased in intensity, as vessels between the Azores and fiftieth parallel on that date, encountered winds of hurricane force, as shown by reports in storm table.

OCEAN GALES AND STORMS, MARCH, 1930

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN			° ′	° ′				*Inches*					
Mercer, Am. S. S.	Liverpool	Boston	45 55 N	39 05 W	Mar. 1	—, 1	Mar. 2	29.65	NNW	NNW, 7	NNW	NNW, 10	Steady.
Calgarolite, Br. M. S.	Lobitos, Peru	Halifax	36 36 N	66 41 W	Mar. 2	8 a, 2	Mar. 3	29.43	S	SSW, 8	NW	NW, 9	SW-W-NW.
Tomalva, Am. S. S.	Rotterdam	Boston	46 20 N	40 38 W	do	1 a, 2	Mar. 2	29.80	NNW	NNW, 9	N	NNW, 10	NNW-N.
Julius Schindler, Ger. M. S.	Curacao	Hamburg	43 14 N	26 16 W	Mar. 1	Noon, 2	do	29.41	SSE	S, —	WSW	—, 10	S-WSW.
Texan, Am. S. S.	Philadelphia	Boston	41 42 N	69 45 W	Mar. 2	7 a, 3	Mar. 3	29.21	NW	WNW, 10	NW	WNW, 10	NW-WNW.
Kentuckian, Am. S. S.	Canal Zone	New York	29 41 N	74 40 W	Mar. 3	2 p, 3	Mar. 4	29.79	NW	NW, 9	NW	NW, 9	WNW-NNW.
Ossining, Am. S. S.	Algiers	Baltimore	34 32 N	52 57 W	do	4 a, 4	do	29.56	SW	W, 10	W	W, 10	SW-W.
Grete, Ger. S. S.	Hamburg	Savannah	40 00 N	24 00 W	Mar. 4	4 p, 4	Mar. 6	29.61	Var	ESE, 6	NNW	NNE, 10	E-N-NNW.
Darian, Br. S. S.	Liverpool	Boston	42 09 N	45 54 W	Mar. 5	8 a, 5	do	29.83	WSW	WSW, —	NW	—, 10	WSW-W-NW.
St. Joseph, Fr. S. S.	Bordeaux	Pointe-a-Pitre	32 45 N	27 28 W	Mar. 4	3 p, 5	Mar. 7	29.49	NNW	NNW, 11	N	NNW, 11	Steady.
Gulfking, Am. S. S.	Charleston	Port Arthur	30 30 N	80 30 W	Mar. 7	9 a, 7	do	29.38	S	S, 8	S	—, 10	
Ossining, Am. S. S.	Algiers	Baltimore	36 07 N	71 55 W	Mar. 8	1 a, 8	Mar. 8	29.16	S	S, 10	W	S, 10	S-W.
Edgemoor, Am. S. S.	Houston	Havre	36 20 N	72 15 W	Mar. 9	10 p, 9	Mar. 10	29.39	WNW	WNW, 7	NNW	WNW, 9	WNW-NNW.
Frederik VIII, Dan. S. S.	Oslo	Halifax	56 50 N	18 33 W	Mar. 10	4 a, 10	do	29.65	WNW	WNW, 6	W	—, 9	Steady.
Spidoleine, Belg. M. S.	Amsterdam	Galveston	49 05 N	6 13 W	do	4 p, 10	Mar. 13	29.97	NNW	NNW, 7	WNW	WNW, 10	NNW-W.
Exford, Am. S. S.	Lisbon	New York	37 10 N	64 30 W	Mar. 12	6 p, 12	do	29.66	SSW	W, 7	W	W, 9	S-W-NW.
Scoresby, Br. S. S.	Marmagao	Hamburg	48 30 N	5 30 W	Mar. 9	3 a, 12	Mar. 12	29.46	WNW	WNW, 9	N	WNW, 10	W-NW.
Silverbelle, Br. M. S.	Port Said	New York	36 18 N	49 30 W	Mar. 13	9 p, 13	Mar. 15	29.53	W	W, 10	NW	—, 10	W-WNW.
McKeesport, Am. S. S.	New York	Havre	48 55 N	18 30 W	do	4 a, 13	do	28.98	NNW	N, 7	NE	NW, 10	
Hellig Olav, Dan. S. S.	do	Christiansand	54 29 N	24 22 W	Mar. 14	4 p, 15	do	29.41	N	N, 6	ENE	N, 10	N-ENE.
Wytheville, Am. S. S.	Antwerp	New York	44 26 N	45 45 W	Mar. 18	Noon, 18	Mar. 20	28.82	SSW	NNE, 7	W	NW, 11	
Reventazon, Br. S. S.	Puerto Castilla.	Bremerhaven	39 00 N	65 00 W	do	9 p, 19	Mar. 19	29.46	SSW	NW, —	NW	W, 12	WSW-NW.
Berlin, Ger. S. S.	Bremerhaven	New York	44 13 N	40 19 W	do	—, 19	do	29.07	SW	WSW, 12	NW	—, 12	SW-WNW
Exarch, Am. S. S.	New York	Gibraltar	38 15 N	21 40 W	Mar. 20	4 p, 20	Mar. 21	29.24	WSW	WSW, 9	NW	W, 10	SW-W.
Enton, Br. M. S.	Falmouth	Halifax	47 09 N	37 09 W	Mar. 22	11 p, 22	Mar. 22	29.49	SSW	S, 9	W	S, 10	SE-W.
Florence Luckenbach, Am. S. S.	Canal Zone	New Orleans	27 02 N	88 13 W	Mar. 25	3 a, 25	Mar. 25	29.83	NW	NW, 7	W	WNW, 9	
Waukegan, Am. S. S.	New York	Havre	47 05 N	29 00 W	Mar. 29	4 p, 29	Mar. 31	29.38	WSW	WSW, 8	NNW	NW, 12	SSW-WNW.
Novian, Br. S. S.	Liverpool	Boston	42 55 N	39 47 W	Mar. 30	6 p, 30	do	28.94	SW	WSW, —	NW	W, 12	SSW-SW.
West Madaket, Am. S. S.	Stettin	Mobile	40 05 N	27 45 W	do	2 p, 31	Apr. 1	29.40	SW	WSW, —	W	—, 11	
NORTH PACIFIC OCEAN													
Choyo Maru, Jap. S. S.	Seattle	Yokohama	55 00 N	168 02 W	Feb. 28	6 p, 28	Mar. 1	28.89	SE	S, 10	WSW	S, 10	
Yukon, Am. S. S.	do	Seward	At Seward, Alaska.		do	7 p, 28	Mar. 2		SE	SE, —		SE, 10	
Tecumseh, Br. S. S.	San Pedro	Nagasaki	32 34 N	165 00 E	Mar. 2	10 a, 2	do	29.45	SE	WSW, 12	NW	WSW, 12	SSW-WSW-N
Nebraskan, Am. S. S.	Los Angeles	New York	13 18 N	94 35 W	do	9 p, 2	Mar. 3	29.98	NE	—, 8	N	—, 8	
Wisconsin, Am. S. S.	Portland	Shanghai	51 26 N	170 55 W	do	7 a, 3	do	29.32	SE	S, —	SW	SW, 11	SE-S-SW
Do	do	do	50 48 N	173 45 W	Mar. 4	2 a, 4	Mar. 5	29.75	W	W, —	W	W, 9	Steady
Kaikyu Maru, Jap. S. S.	Muroran	Port Alberni	49 39 N	179 25 E	Mar. 3	11 p, 3	Mar. 4	28.78	S	SE, 2	SW	WSW, 9	4 pts.
Canadian Inventor, Br. S. S.	Victoria	Panama	39 17 N	124 04 W	Mar. 4	4 a, 4	Mar. 5	29.57	SE	SE, —	SW	SSE, 9	SE-S
Choyo Maru, Jap. S. S.	Seattle	Yokohama	51 53 N	166 22 E	Mar. 7	8 p, 7	Mar. 7	29.57	W	N, 6	W	W, 9	W-N
Olympia, Am. S. S.	Taku Bar	Seattle	45 49 N	164 20 E	Mar. 10	2 a, 10	Mar. 11	29.35	SE	S, 7	NW	SW, 9	SE-S-SW
Oridono Maru, Jap. S. S.	Yokohama	Willapa	50 11 N	163 35 W	do	Mdt, 10	do	29.89	SSW	SSW, 9	SW	SSW, 9	SSW-SW
Hakonesan Maru, Jap. M. S.	Vancouver	Yokohama	52 02 N	149 52 W	Mar. 11	6 a, 12	Mar. 12		SW	WNW, 7	WNW	WNW, 9	W-WNW

OCEAN GALES AND STORMS, MARCH, 1930

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH PACIFIC OCEAN—continued			° ′	° ′				*Inches*					
Aden Maru, Jap. S. S.	Milke	Iloilo	29 33 N	128 10 E	Mar. 12	2 p, 12	Mar. 13	29.29	E	SW, —	W	SW, 10	SE-SW-W
Tacoma, Am. S. S.	Manila	San Francisco	42 15 N	135 20 W	do	10 p, 13	Mar. 16	29.97	NW	N, 9	NNE	N, 9	N-NNE
Benghalis, Du. S. S.	Borneo	Los Angeles	33 10 N	131 30 W	Mar. 13	2 p, 14	Mar. 15	29.80	NNW	NW, 9	NW	NW, 10	Steady
Makua, Am. S. S.	Hawaii	San Francisco	36 15 N	126 20 W	Mar. 14		Mar. 14	29.46	NW	NW, 9	N	NW, 9	Do.
Wisconsin, Am. S. S.	Portland	Shanghai	50 01 N	177 20 E	Mar. 7	2 p, 8	Mar. 9	29.46	W	WSW, —	NW	WSW, 11	WSW-NW
Do	do	do	49 44 N	176 00 E	Mar. 10	Noon, 10	Mar. 11	29.21	S	S, 8	WNW	SE, 11	S-SE-SW
Do	do	do	44 06 N	151 15 E	Mar. 14	8 p, 14	Mar. 15	29.63	ESE	ESE, 7	SE	ESE, 9	ESE-SE
California, Am. S. S.	Meridian 180°	San Francisco	45 10 N	175 26 W	Mar. 16	8 p, 16	Mar. 16	29.31	N	N, 8	SE	NW, 10	N-NNW.
Hakubasan Maru, Jap. M. S.	Yokohama	do	46 36 N	174 20 W	do	8 p, 17	Mar. 18	29.67	NNE	NE, 10	E	NE, 11	NNE-ENE
Emp. of Asia, Br. S. S.	do	Vancouver	49 32 N	164 17 E	Mar. 17	1 p, 19	Mar. 19	29.79	NE	NNE, 6	NE	NE, 10	Steady
Pres. Madison, Am. S. S.	do	Victoria	48 50 N	144 18 W	Mar. 16	4 a, 21	Mar. 22	29.24	N	W, 6	W	NE, 11	E-W
Ethan Allen, Am. S. S.	San Pedro	Kobe	32 45 N	140 50 E	Mar. 20	7 p, 20	Mar. 21	29.67	NNE	NNE, 6	NNE	NNE, 10	Steady
Nevada, Am. S. S.	Astoria	Yokohama	36° N	146° E	do	4 a, 21	Mar. 22	29.42	S	E, 10	NNW	NNW, 11	ESE-E-N
Tecumseh, Br. S. S.	Yokohama	San Pedro	38 43 N	153 30 E	Mar. 21	7 p, 21	Mar. 21	29.25	SE	SSE, 11	SW	SSE, 11	SE-SSE
Hakonesan Maru, Jap. M. S.	Vancouver	Yokohama	42 00 N	149 20 E	Mar. 20	3 a, 22	Mar. 24	28.92	SE	ESE, 4	NW	NW, 12	ESE-NW
Pres. Pierce, Am. S. S.	Yokohama	San Francisco	29 44 N	178 15 W	Mar. 23	6 p, 24	do	29.56	SW	WNW, 9	WNW	WNW, 9	2 pts.
Steelmaker, Am. S. S.	Honolulu	Yokohama	28 34 N	157 33 E	Mar. 26	6 a, 26	Mar. 28	29.62	SE	SE, 8	NNE	NNE, 9	
Do	do	do	32 15 N	146 01 E	Mar. 29	2 a, 29	Mar. 30	30.15	SSE	S, 8	SSW	SSW, 10	W-NW
Northwestern, Am. S. S.	Seward	Seattle	60 35 N	146 15 W	Mar. 31	8 a, 31	Mar. 31	29.28	SW	—, 6	SE	SW, 9	NE-SW

• Approximate.

NORTH PACIFIC OCEAN

By WILLIS E. HURD

Following upon the abnormal conditions of mean monthly atmospheric pressure which prevailed over some eastern parts of the North Pacific Ocean during the past January and February, the pressure of March settled more nearly into average. The Aleutian cyclone, while it spread on several days over a large area in the central Pacific, at times extending into the Tropics, was central over the upper western waters of the Gulf of Alaska, the minimum station average being 29.71 inches, at Kodiak. The mean pressures over the eastern part of the Bering Sea were raised considerably by the passage of an anticyclone of great magnitude during the 16th to 20th. The HIGH crested at Dutch Harbor and St. Paul on the 17th, giving maxima of 30.78 and 31.06 inches, respectively, which extreme readings appear to be the record high for March at these stations, and near record at Dutch Harbor for all months, being exceeded only in January, 1916, and February, 1922.

The California-Pacific anticyclone attained a high state of development which persisted through the greater part of the month. A feature was its local intrusion upon the coast of Washington and vicinity, where monthly pressures above normal occurred, whereas farther north and south coastal averages were below the normal.

Much high pressure prevailed on the Asiatic coast and over adjacent waters, resulting in some activity of the northeast monsoon. Its regularity, however, was considerably broken by several disturbances in low latitudes, one of which became a typhoon, and by several rather deep depressions which entered or formed over upper waters.

Barometric data for several island and coast stations in west longitudes, including Point Barrow on the Arctic Ocean, are given in the following table:

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level at indicated hours, North Pacific Ocean and adjacent waters, March, 1930*

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Point Barrow [1]	30.06		30.74	17th	29.22	1st.
Dutch Harbor [1]	29.85	+0.11	30.78	17th	29.20	26th.
St. Paul [1]	29.86	+0.11	31.06	17th	29.16	4th.
Kodiak [1]	29.71	−0.04	30.52	18th	28.86	5th.[2]
Midway Island [1]	30.07	−0.01	30.42	30th	29.56	23d.
Honolulu [3]	30.02	−0.02	30.16	4th	29.84	23d.
Juneau [3]	29.80	−0.14	30.70	29th	29.25	7th.
Tatoosh Island [3 4]	30.07	+0.09	30.43	26th	29.58	21st.
San Francisco [3 4]	29.98	−0.07	30.34	22d	29.37	14th.
San Diego [3 4]	29.97	−0.05	30.20	21st	29.61	14th.

[1] P. m. observations only.
[2] And on other date.
[3] A. m. and p. m. observations.
[4] Corrected to 24-hour mean.

The month may properly be called a stormy one on the North Pacific, since the vessel record, incomplete though it doubtless is at the present writing, shows eight days on which full storm to hurricane velocities occurred, in addition to several other days with whole gales. On the whole, however, storm conditions were less pronounced and widespread than in February, and much less so than in January, while they were only slightly more severe than in November and December of last year. For the entire period of five months it may safely be said there was an unusual succession of stormy weather. The higher